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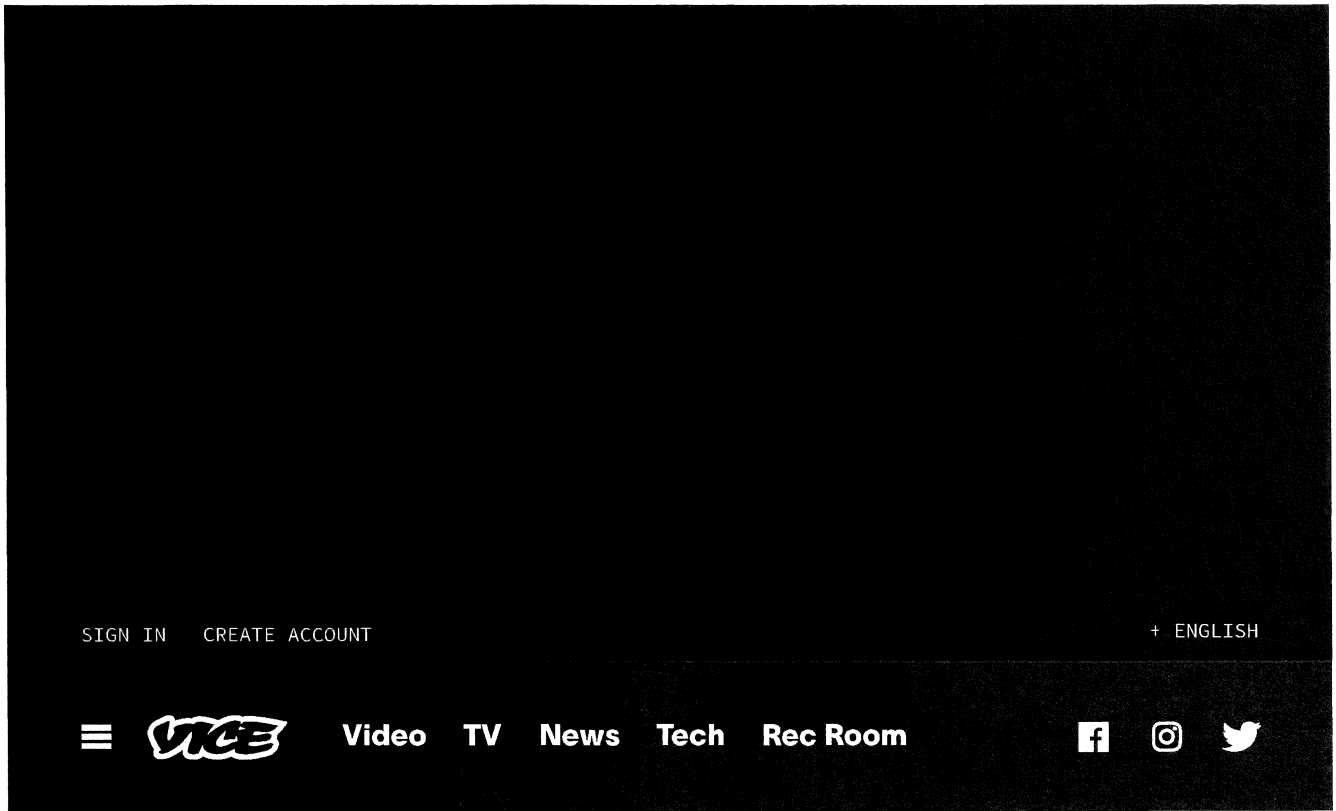


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# Inside 'TALON,' the

# Nationwide Network of AI-Enabled Surveillance Cameras

Hundreds of pages of emails obtained by Motherboard show how little-known company Flock has expanded from surveilling individual neighborhoods into a network of smart cameras that spans the United States.

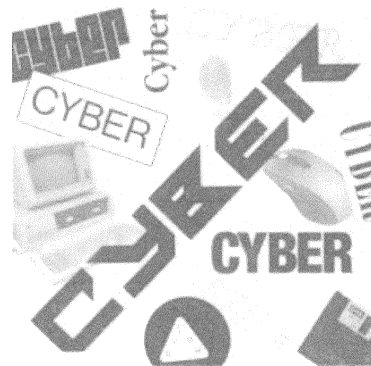


By [Joseph Cox](#)

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"Give your neighborhood peace of mind," an advertisement for Flock, a line of smart surveillance cameras, reads. A [February promotional video](#) claims that the company's "mission is to eliminate nonviolent crime across the country. We can only do that by working with every neighborhood and every police department throughout the country."

Quietly, this seems to be happening. Flock, whose cameras use automatic license plate reader technology, is well on its way to deploying a connected network of AI-powered cameras that detect the movements of cars across the United States.



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The cameras, which are sold to law enforcement, homeowners associations, and businesses, can automatically record when a "non-resident" vehicle drives into a community, and alert police to cars on a hotlist. Communities have created "virtual gates" around their neighborhoods, with cameras capturing each vehicle driving in and out of the area. Through a program called TALON, this little-known company is allowing police officers to track cars—and by extension, specific people—outside of their own jurisdictions.

Hundreds of pages of internal police emails from nearly 20 police departments around the country obtained using public records requests by Motherboard show how Flock has slowly expanded its network, helped law enforcement agencies gain access to it, and has rolled out TALON with very little fanfare. TALON gives police access to a nationwide network of cameras that have been installed by law enforcement agencies around the country.

The TALON network offers up to 500 million scans of vehicles a month, according to one email obtained by Motherboard. Over 500 police departments in more than 1,000 cities have access to Flock cameras, according to marketing material. In the promotional video, the company claims to be able to detect people, cars, animals, and bicycles, and says it is "collecting evidence" that helps police solve 4 to 5 crimes per hour. The

administrator of the neighborhood's camera network can make the data Flock captures available to, say, the police, the home owner association's board, or the individual members of an entire neighborhood.

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Previous coverage has focused on how residents in individual neighborhoods have banded together to purchase Flock cameras for their own use. In 2019, the Los Angeles Times reported how members of a community in Sherman Oaks purchased the cameras to keep tabs on which cars are driving in and out of their own area.

Emails obtained by Motherboard show police-purchased Flock cameras may be installed outside a Burger King, a Lowes, or other businesses, and that controversial Fusion Centers, which hoover in data from various federal, state, and local sources to monitor large areas of the country at once, have also discussed gaining access to the footage.

The emails also show how Flock works closely with police to try and generate positive media coverage, improve their PR strategy, and ultimately "get your jurisdiction activated" and "bring more private cameras into the area." In some cases Flock has helped write press releases for agencies, the emails show.

"I think of it as the Ring doorbell of LPR," Sergeant JT Maultsby from the

Raleigh Police Department wrote in one July 2019 email to colleagues.



FLOCK MARKETING MATERIAL INCLUDED IN EMAILS OBTAINED BY MOTHERBOARD. IMAGE: MOTHERBOARD

Garrett Langley founded Flock in 2017 after being the victim of property crime in Atlanta, according to the company's website.

"I'm not someone with 25 years of public safety or law enforcement experience. I'm just a civilian that happens to be an electrical engineer, and when I think about the larger mission of Flock, it is to eliminate crime," Langley told Motherboard in a phone call.

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Traditionally, license plate reader cameras have been the expensive property of law enforcement, but Flock's much cheaper and sometimes solar-powered, \$2,500 (annually) hardware has tapped a whole new market of private residents who also want to track vehicles in their neighborhoods with the goal of preventing and helping investigate crime.

"If our average private customer has two cameras, it's probably because they're a one-way-in, one-way-out cul de sac," Langley said. "This technology has existed for a long time, it's just never been widely available. And now, whether you're a community of 20 homes, or a community of 2,000 homes, you can now afford, what I would argue, is the best in class for crime prevention."

But beyond the cute and suburb-friendly marketing, Flock has privacy experts increasingly concerned about a pervasive, expanding network of AI-powered cameras that can be leveraged by both private residents and law enforcement.

"ALPR is a mass surveillance technology. It does not discriminate between people who are involved in crimes and people who are innocent. It just collects data on everyone, with the assumption that maybe one day you might commit a crime," Dave Maass, director of investigations at activist group the Electronic Frontier Foundation (EFF), told Motherboard in a phone call.

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***Do you have any more information about Flock? Do you use it, or do you know about a case of abuse? We'd love to hear from you. Using a non-work phone or computer, you can contact Joseph Cox securely on Signal on +44 20 8133 5190, Wickr on josephcox, OTR chat on jfcox@jabber.ccc.de, or email joseph.cox@vice.com.***

Such a system, like others before it, brings up questions: Is it biased in how and where the hardware is placed? Is the technology disproportionately used against cars belonging to Black people and people of color? Is the data eventually abused?

"My concern, much as with with Ring is that these technologies enable a massively expanded surveillance network that in most cases has little to no oversight or accountability," Chris Gilliard, a research fellow with the Technology and Social Change Research Project at Harvard Kennedy School's Shorenstein Center, told Motherboard in an online chat. "On top of that, I worry that it creates another vector for neighborhoods, and by extension law enforcement, to surveil Black folks who are just going about their business. We saw this recently when LAPD requested Ring footage of Black Lives Matter protestors."

"As the Supreme Court has repeatedly explained, police access to people's electronically collected location history raises serious privacy concerns. License plate readers can create a precise record of where we go and when, and over time can reveal a wealth of sensitive information about our lives," Nate Wessler, deputy project director of the Speech, Privacy, and Technology Project at the American Civil Liberties Union (ACLU), told Motherboard in an email.



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"It is no comfort when these devices are being deployed in supposedly piecemeal fashion by scattered private users," he added. "By providing police with an internet platform to easily stitch together information from dozens or hundreds of license plate readers—without getting a search warrant from a judge—companies like Flock threaten to enable pervasive tracking of our activities and movements."

Flock's cameras come in two models: the Sparrow for collecting footage that can be reviewed later and potentially used as evidence, and the Falcon, which can also send automatic alerts to police if the camera detects a vehicle on a hotlist. The cameras can work at night, and label vehicles that don't belong to the local community as "non-resident." Video surveillance trade publication IPVM found in its tests that the Flock hardware generally worked well, but had some issues misidentifying some vehicles as buses or misreading the state on a license plate. A publicly available document published by the County of San Diego says that Flock cameras work across distances of 8-120ft. Maass pointed Motherboard to the document.



FLOCK MARKETING MATERIAL INCLUDED IN EMAILS OBTAINED BY MOTHERBOARD. IMAGE: MOTHERBOARD

The company also offers a product that turns existing internet connected cameras into Flock-enabled cameras, and the hardware can be connected to the National Crime Information Center (NCIC), which automatically alerts law enforcement when the camera detects someone in that database. The NCIC includes information on stolen vehicles, immigration violators, missing persons, sex offenders, gang members, and more. Flock pushes an average of 120 hotlist notifications every hour, according to its marketing material.

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With these lists, police have wide latitude to use Flock for whatever is legally permissible in their own jurisdiction. The County of San Diego document also says that police departments can upload their own custom hotlists in a spreadsheet.

When asked if Flock could include scanning for immigration-related license plates, Flock's Langley told Motherboard "Yes, if it was legal in a state, we would not be in a position to stop them. I don't think we would be in a

position to encourage it either."

"We give our customers the tools to decide and let them go from there," he added.

Police can also use a "Google-like" search feature to filter footage for certain types and colors of cars, as well as whether they have a roof rack or spoiler. The cameras also record vehicles that do not have a license plate at all, and can perform "convoy analysis" to identify suspicious groups of vehicles, marketing material shows. This year, the company plans to introduce a reverse image search feature and an app police officers can use to take a photo of a car and then look up the previous movements of that vehicle, it adds.

Beyond automatic alerts, communities can, similar to Ring, elect to provide their footage to a law enforcement agency who may then use it to investigate a potential crime.

"Our customers tend to buy this product to better serve their local law enforcement agency," Langley added.

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The potential use cases are not just for law enforcement, however. When asked whether Flock data has ever been requested as part of a civil divorce

case, Langley said, "In my knowledge, which is obviously not perfect, there's been one example of what you're describing, but by the time all of the legal proceedings and everything went through, it was past 30 days, and the footage was gone." (Camera footage is stored on Flock's systems for 30 days, the emails say. But police can download the data and keep hold of it if it is used as evidence in a criminal case, Flock told Motherboard in an email.)

At least some police officers are facing an overload of footage and material as citizens continue to move into self-surveillance tools, like Ring and Flock.

"Another issue I see in the future is adjusting expectations of the residents we serve as we are seeing a trend where we are overloaded with video evidence and multiple databases (RING, Nextdoor, individual cell phones and businesses, etc.)," Sgt. Bruce Clark of the San Antonio Police Department wrote to colleagues in an August 2019 email.



FLOCK MARKETING MATERIAL INCLUDED IN EMAILS OBTAINED BY MOTHERBOARD. IMAGE: MOTHERBOARD

Once a community installs a set of cameras, Flock may then reach out to

police departments to let them know about the possibility of accessing the footage.

"Would love to talk to you about access to free cameras already installed in Tucson (MOU) [memorandum of understanding] as well as access to State/national cameras (all free...)," a Flock territory sales manager wrote to the Tucson Police Department in an October 2020 email. Police can also use a "Camera Map" feature to see where cameras are located and then request access themselves, another email adds. Flock told Motherboard this map includes cameras from neighborhoods or small businesses within a certain radius.

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Fusion Centers have also expressed interest in accessing Flock data.

"FLOCK already has their license plate reader systems in several neighborhoods in North SA [San Antonio] now," James Glass, the deputy director of the Southwest Texas Fusion Center, wrote in an October 2020 email to colleagues. "In order to be granted free access to search the FLOCK system for license plate reader hits, we are asked to agree to sign this MOU." Glass did not respond to a request for comment.

Ray Schultz, the chief of the Memorial Villages Police Department in Texas, told Motherboard the department recovered 61 stolen vehicles last year,

with a \$1.8 million value of vehicles recovered since it started using the ALPR system.

"A couple more great successes this weekend," Schultz wrote in a June 2020 email to Flock employees. "2 recoveries, including one with stolen ID, a Stimulus Check and Fake ID's. A few pics are below." Schultz clarified to Motherboard that the Stimulus Check was stolen, too. Flock encourages police officers to share these sorts of success stories with the company.

Similar to how Ring works hand-in-hand with police departments to help craft press releases and promote sales of its cameras, Flock's relationship extends beyond just selling cameras or providing law enforcement access to any generated footage.

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In one email, a Flock staffer offered members of the New Lenox Police Department their abilities for "drafting social media posts, pitching local reporters, writing press releases." The purpose, ultimately, is to "generate some goodwill and get your jurisdiction activated, bring more private cameras into the area, and highlight your successes!" the email from the Flock staffer continues. "Please use us as your resource!"

The result is a circle, with Flock working with police to generate positive coverage, to encourage more communities to purchase cameras, and to then provide access to that footage to the police, and around again.

"We have seen these stories be very successful in helping grow the awareness of the ALPRs, helping gain traction with HOAs [home owners associations], banks, and other businesses that could potentially buy more cameras for the Village," another Flock staffer wrote to the New Lenox Police Department. The email added that Flock has helped craft press releases for other Illinois agencies.

"I think they want to give it to us so they can say they are working with SAPD. Same method as Ring Doorbell," Aric C. Jimenez from the San Antonio Police Department wrote to colleagues in a July 2019 email.

Josh Thomas, VP of marketing for Flock, acknowledged in a phone call this sort of PR relationship between a private company and law enforcement agencies was "probably not standard."



"Historically law enforcement agencies just aren't that great at explaining to the public how they're using their technology," he said. "We need to let the public know what is happening, and we should work with them to make that possible."

FLOCK MARKETING MATERIAL INCLUDED IN EMAILS OBTAINED BY MOTHERBOARD. IMAGE: MOTHERBOARD

Flock's business with law enforcement appears to be booming.

"What we're seeing is, very specifically, a market war going on between two particular companies," Maass from the EFF told Motherboard. One of those is Motorola Solutions, which owns Vigilant Solutions, an established ALPR vendor which sells cameras to law enforcement. The other is law enforcement contracting giant Axon, which has partnered with Flock, including integrating Flock with Axon's own in-car cameras.



"Axon Fleet 3 mobile ALPR will be integrated into the Flock Safety System allowing law enforcement to use Flock's Vehicle Fingerprint Technology across both mobile and fixed ALPR reads. This will create an unmatched city-wide ALPR network designed to not only capture license plate numbers, but to capture objective vehicle evidence to help law enforcement solve more crime," Flock marketing material reads.

Historically, Vigilant had likely the largest market share of law enforcement-owned ALPR cameras around the country. But because Flock is so much cheaper it has been able to flip a growing number of police departments to its products, Maass said. Flock told Motherboard it has acquired some law enforcement customers who previously worked with other vendors, but also attributed that to what they said was a better product and their commitment to "ethical development."

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"From what I understand there are people in the law enforcement community who have been turned off by Vigilant Solutions," Maass said. Immigration and Customs Enforcement has bought access to Vigilant's nationwide dataset; Customs and Border Protection likely did the same. Vigilant also offers facial recognition technology. Vigilant is still a formidable presence in the market, however, working with more than 1,600 agencies according to the public County of San Diego document.

"Flock, because it is affiliated with Axon now, is posturing itself as the more ethical solution than Vigilant," Maass said. (Axon also makes tasers and body cameras, and has faced criticism from civil rights groups.)

In the recent marketing video, a Flock employee says "privacy is very important to Flock, and we have done a lot to protect privacy of our customers." The employee appears to be talking about the privacy of the people who own or administrate cameras, not the privacy of the general public, who may drive past a network of Flock cameras. Residents of communities that have bought the cameras can ask to opt-out of having their vehicle movements recorded, Flock's website reads. For other people who may drive past cameras, there is no meaningful mechanism of consent as they may not be aware such cameras are recording their movements or which neighborhoods to contact one by one in an effort to opt-out.

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Some of the emails obtained by Motherboard include invitations from Flock to police departments to join online "roundtables" with Flock's Langley and Axon CEO Rick Smith.

"Rick will discuss ethics-first design of ALPRs and how that aligns with police reform efforts and where the technology is going. Joining him will be Flock Safety CEO and Founder, Garret Langley. The Axon AI Ethics Board is an independent body that is rapidly gaining influence among both law

enforcement and community/justice reform communities," one of the emails reads. Another shows an AXON employee talking to members of the San Antonio Police Department offering to answer questions about Flock.

Maass also pointed to Flock's 30-day retention period, but doesn't think that will necessarily result in fewer plates being scanned. Because of Flock's cheaper price, "police can install more of them," Maass said. "Combined with all of the home owners associations, there actually may be even worse problems."

Police have been purchasing and installing Flock's cameras around their neighborhoods, according to the emails.

"Myself and Sgt. Nuesse have been working with Walmart, Lowes, and Burger King to secure permission to either sink a pole or attach to their existing for 03, 04 and 17," Hilary Davis, the deputy chief of the New Lenox Police Department, wrote in an August 2020 email to Flock, referring to a specific series of camera installations.

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Some of the emails included links to web pages used by Flock's customers and engineers to lay out where the cameras are to be set up. As well as the New Lenox cameras, another showed camera locations in Atherton, California.

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The City Council approved the purchase of 16 cameras in May 2020, according to a local media report.

"In addition to the 16 ALPR cameras located along the Atherton borders, Staff believes that the presence of additional ALPR cameras in an [sic] around the backstreets will further increase the chances of identifying a vehicle used in the commission of a crime. Thus, staff seeks to form a Public/Private partnership opportunity with any resident interested in purchasing a Flock ALPR camera," a City Council report reads. "In short, a private resident would fund single or multiple Flock ALPR cameras and the Atherton Police Department would assume the administrative responsibilities associated with the camera's operation. Staff has already been approached by residents in the Lindenwood and Lloyd Park neighborhoods who expressed interest in this proposed collaborative crime solving effort."

Drawing even clearer comparisons to Vigilant, Flock now offers law enforcement clients access to the nationwide network of police-purchased

cameras, called the Total Analytics Law Officers Network, or TALON.

"TALON—a local and national plate search with up to 500M monthly plate reads," one October 2020 email from a Flock employee to the New Lenox Police Department reads. Flock publicly announced the TALON product in August 2020. Each agency which owns Flock cameras opts-in to sharing their footage, the blog post adds.

Although operating in a more concentrated area than Flock cameras spread across the United States, in Johannesburg, South Africa, a company called Vumacam has installed smart cameras across a mostly white, middle-class suburb to increase the security of their neighborhood, in what can be described as an "AI-powered apartheid."

With Flock, "When you have these systems paid for by wealthier businesses, or wealthier neighborhoods, that may result in a disproportionate level of service between communities," Maass said. On one side, you may have a richer, whiter neighborhood, and on the other, a poorer Black community, but both with car thefts.

"If one neighborhood has a bunch of surveillance cameras designed to stop those car thefts, then perhaps they're going to have police come out and solve those crimes more than in other communities," Maass added.

Police departments may collect data on more communities than others, either with intent as part of a deliberate program, or passively by, say, responding to more crimes with an ALPR camera in their vehicle and then collecting more data with that, Maass said.

Police, for their part, will likely continue to both buy and obtain footage from, Flock cameras.

"We actually continue to encourage residents to obtain and use video doorbells and outside video systems. We have found that the various tools